

I-15.01 General

The basic requirements for highway design are outlined in 23 CFR 625, “Design Standards for Highways.” This regulation references a number of other documents and publications which are included in the **Design Manual** by reference. Following is a listing of specific publications that are utilized in highway design in North Dakota.

I-15.02 Reference Publications - - Roadway Design

- A Policy on Geometric Design of Highways and Streets. 4th ed. AASHTO, 2001.
- Roadside Design Guide. AASHTO, Current Edition.
- “Standard Specifications for Road and Bridge Construction.” North Dakota Department of Transportation Standard Specifications Manual. 2002. NDDOT.
<http://www.dot.nd.gov/dotnet/supplspecs/standardspecs.aspx>
- “North Dakota Department of Transportation Design Manual.” Current Edition. NDDOT. <http://www.dot.nd.gov/designmanual.html>
- “North Dakota Department of Transportation CADD Standards Manual.” Current Edition. NDDOT. <http://www.dot.nd.gov/designmanual.html>
- “North Dakota Department of Transportation Design Standard Drawings.” Current Edition. NDDOT.
<http://www.dot.nd.gov/dotnet/standarddrawings/std drawings.aspx>
- “Partnership Plan for Federal-aid Highway Program Stewardship in North Dakota,” by FHWA North Dakota Division and NDDOT.
<http://mydot.nd.gov/manuals/StewardshipAgreementManualTag.pdf>
- Guide for Design of Pavement Structures and 1998 Supplement. AASHTO, 1998.
- Manual on Uniform Traffic Control Devices (MUTCD). Federal Highway Administration. Current Edition. <http://mutcd.fhwa.dot.gov/>
- Standard Highway Signs, English Version. Federal Highway Administration, 2004.
http://mutcd.fhwa.dot.gov/ser-shs_millennium_eng.htm
- Clearview Typeface Supplement, English Version (MUTCD). Federal Highway Administration, 2004. <http://mutcd.fhwa.dot.gov/htm/clearfont/index.htm>

- Traffic Control Devices Handbook. Institute of Transportation Engineers, 2001.
- Traffic Engineering Handbook. 5th ed. Institute of Transportation Engineers, 1999.
- Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. 4th ed. AASHTO, 2001.
- A Guide to Standardized Highway Barrier Hardware. 2nd ed. American Road and Transportation Builders Association (ARTBA), 1995.
<http://www.aashtotf13.org/Barrier-Hardware.asp>
- Guide for Development of New Bicycle Facilities. 3rd ed. AASHTO, 1999.
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities. 1st ed. AASHTO, 2004.
- "Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines for Access." 1999. Federal Highway Administration.
<http://www.fhwa.dot.gov/environment/sidewalks/>
- "Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide." 2001. Federal Highway Administration.
<http://www.fhwa.dot.gov/environment/sidewalk2/>
- "Right of Way Manual." North Dakota Department of Transportation Manuals. NDDOT.
<http://www.dot.nd.gov/manuals/rowmanual/right%20of%20way%20manual.pdf>
- "A Policy for Accommodation of Utilities on State Highway Right-of-Way." Dec. 2006. NDDOT. <http://www.dot.nd.gov/docs/design/policy-utilities-state-row.pdf>
- "Utility Relocation and Accommodation of Federal-Aid Highway Projects." Jan. 2003. Federal Highway Administration. <http://www.fhwa.dot.gov/reports/utilguid/>
- "NDDOT Local Government Manual." NDDOT. Current Edition.
- "North Dakota Department of Transportation Survey Manual, Chapter 18 (90-1 Survey)." 2005. NDDOT. <http://www.dot.nd.gov/manuals/surveymanual/surveyphotomanual.html>
- "North Dakota Department of Transportation Survey Manual, Chapter 19 (Consultant Survey)." 2005. NDDOT.
<http://www.dot.nd.gov/manuals/surveymanual/surveyphotomanual.html>

- Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03, U.S. Customary Units). Federal Highway Administration, 2003.
<http://www.wfl.fhwa.dot.gov/design/specs/fp03.htm>

I-15.03 Reference Publications - - Structural Design

- A Policy on Geometric Design of Highways and Streets. 4th ed. AASHTO, 2001.
- "Standard Specifications for Road and Bridge Construction." North Dakota Department of Transportation Standard Specifications Manual. 2002. NDDOT.
<http://www.dot.nd.gov/dotnet/suplspecs/standardspecs.aspx>
- AASHTO LRFD Bridge Design Specifications. AASHTO, Current Edition.
- Standard Specifications for Highway Bridges. 17th ed. AASHTO, 2002.
- "Title 23 - Code of Federal Regulations, Section 650 (23 CFR 650)." Federal-Aid Policy Guide. 2008. Federal Highway Administration. All applicable sections.
<http://www.fhwa.dot.gov/legisregs/directives/cfr23toc.htm>
- "Prestressed Girder Design and Checking Guide." NDDOT.
http://www.dot.nd.gov/manuals/designmanual/chapter4/DM-4-04_tag.pdf
- Highway Structures Design Handbook. Vols. I and II. American Institute of Steel Construction.
- "LRFD Design Bridge Manual." NDDOT.
<http://www.dot.nd.gov/manuals/lrfd-bridge-design/lrfd-bridge.htm>
- "Box Culvert Program." NDDOT. <ftp://ftp.state.nd.us/bridge/>

I-15.04 Reference Publications - - Other

- A. Code of Federal Regulations (CFR). The CFR is a codification of the general and permanent rules published in the Federal Register by agencies of the Federal Government. The code is divided into 50 titles representing broad areas of Federal regulations. Title 23 CFR, Highways, is the volume representing those current regulations applicable to the Federal Highway Administration and the FLH Program. The following are the parts of 23 CFR that are most relevant to the development and design of highways:
 - Part 620, Subpart A. Highway Improvements in the Vicinity of Airports.

- Part 625. Design Standards for Highways.
- Part 630. Preconstruction Procedures.
- Part 650. Bridges, Structures and Hydraulics.
- Part 650, Subpart B. Erosion and Sediment Control on Highway Construction Projects
- Part 652. Pedestrian and Bicycle Accommodations and Projects.
- Part 655. Traffic Operations.
- Part 752. Landscape and Roadside Development.
- Part 771. Environmental Impact and Related Procedures.
- Part 772. Procedures for Abatement of Highway Traffic Noise and Construction Noise.

NOTE: CFR's can be viewed online at the following link:

<http://www.fhwa.dot.gov/legsregs/directives/cfr23toc.htm>

- B. Federal Lands Highway Manual (FLHM). The manual is a one-volume book of documents developed by the Federal Lands Highway Office to consolidate all basic policies, directives, standards and guides pertaining to the Federal Lands Highway operations. Link to FLHM Project Development and Design Manual:
<http://www.wfl.fhwa.dot.gov/design/manual/>

All of the above publications are readily available to persons performing design work for the department. In addition, there are many other AASHTO and FHWA publications and periodicals that are received and distributed to the various design entities.